PLAINTIFFS' ADMINISTRATIVE MOTION TO FILE SUPPLEMENT ISO THEIR MOTION FOR ORDER REQUIRING GOOGLE TO SHOW CAUSE WHY IT SHOULD NOT BE SANCTIONED FOR DISCOVERY MISCONDUCT; DELCARATION OF MARK C. MAO

Redacted Version of Document Sought to be Sealed

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

CHASOM BROWN, WILLIAM BYATT, JEREMY DAVIS, CHRISTOPHER CASTILLO, and MONIQUE TRUJILLO individually and on behalf of all similarly situated, Plaintiffs, vs. GOOGLE LLC, Defendant.	Case No.: 4:20-cv-03664-YGR-SVK **PLAINTIFFS' ADMINISTRATIVE MOTION TO FILE SUPPLEMENT IN SUPPORT OF THEIR MOTION FOR ORDER REQUIRING GOOGLE TO SHOW CAUSE WHY IT SHOULD NOT BE SANCTIONED FOR DISCOVERY MISCONDUCT; DELCARATION OF MARK C. MAO** The Honorable Susan van Keulen Courtroom 6 – 4th Floor Date: April 21, 2022

1   Pursuant to Local Rule 7-11 and this Court's March 21 Order (Dkt. No. 508), Plaintiffs

2   respectfully submit this administrative motion requesting leave to supplement their motion for

3   sanctions (Dkt. 430) with the material outlined in this five-page motion. The material below

4   consists of recently-discovered evidence showing Google further withheld discovery regarding the

5   identification of private browsing activity. Plaintiffs' sanctions motion focused on Google's

6   concealment of a "maybe_chrome_incognito" field. Plaintiffs have now learned that Google *also*

7   concealed the implementation of *additional* Google fields that Google has used to detect Chrome

8   browser Incognito traffic, since 2017, including fields named "is_chrome_incognito" and

9   "is_chrome_non_incognito." These fields rely not only on the X-Client Data header information

10   ███

11   ███

12   ███

13   ██ Yet

14   Google withheld this information. Because Plaintiffs' discovery of these additional fields further

15   illustrates the severe prejudice caused by Google's pattern and practice of withholding key

16   information regarding identification of private browsing activity, Plaintiffs seek leave to

17   supplement their motion.

SUPPLEMENTAL FACTS

19   Since filing their motion for an order to show cause, Plaintiffs have continued to request

20   full production of schema and fields, which Google has continued to resist. ¶ 9.[1] Having learned

21   about Google's withholding of discovery concerning Google's "maybe_chrome_incognito" field,

22   Plaintiffs pressed Google for what other "incognito" fields Google may have been redacting from

23   the schema. ¶ 10. During the Special Master process, Plaintiffs asked Google about an internal

24   proposal to ██

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[1] Except where otherwise noted, all exhibit and paragraph references in this submission are to the Declaration of Mark C. Mao in Support of Plaintiffs' Administrative Motion to File Supplement in Support of Their Request for an Order to Show Cause, which is filed concurrently herewith.

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1   ██████████████████████████   *See* Ex. 1, GOOG-BRWN-00536949. Google still refused

2   to answer.   Instead, it required Plaintiffs to wait until the 30(b)(6) deposition of Dr. Caitlin

3   Sadowski, which was not until March 10. ¶ 11.

4   At the ensuing deposition, Dr. Sadowski produced a document showing that Google has

5   multiple,   live   logs   containing   fields   entitled   "is_chrome_non_incognito"   and

6   "is_chrome_incognito." ¶ 13 & Ex. 2. That Google document lists ██ Google logs that contain

7   these Incognito detection fields, none of which had previously been disclosed to Plaintiffs or

8   Special Master Brush. ¶¶ 14-15. Dr. Sadowski testified that in each of these logs, Google uses

9   ████████████████████ the X-Client-Data header—t████████████████████████████████

10 ████████████████. *See* Ex. 3, Sadowski Tr. 71:8-23. Further, Dr. Sadowski testified:

- **Undisclosed Witness**: A Google employee named Quinton Fiard is the person most knowledgeable about these Incognito detection fields and logs. Ex. 3, Sadowski Tr. 77:6-8, 87:18-20, 92:4-6. Mr. Fiard was not previously identified by Google as a witness with relevant information. *See* Dkt. 430-5 (list of over 200 Google employees provided to Plaintiffs).

- **Undisclosed Dashboard**: These Google logs containing the Incognito detection fields are also used by some unidentified Google dashboard relating to Chrome Incognito mode, which also was not previously disclosed by Google. Ex, 3, Sadowski Tr. 69:25-73:2 (Google still has not provided requested discovery concerning that dashboard.)

- **Undisclosed Logs**: Dr. Sadowski did not know how many *other* Google logs contain the term "incognito" in the field name, although she acknowledged that Google could craft a query to search its logs using that term. Ex. 3, Sadowski Tr. 23:8-24:23, 85:18-86:15.

19   Despite Plaintiffs' multiple demands and meet and confer efforts, Google has still not

20 provided schema for these additional logs containing these Chrome Incognito fields. ¶ 17. And

21 Google's counsel will not confirm how many logs it left out from the Special Master process that

22 contain the term "incognito" in a field name, or whether Google made a full production of all

23 documentation relating to these logs and fields.[2] ¶ 18.

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[2] Plaintiffs note that they have repeatedly asked for confirmation that the documentation around the omitted logs has been produced, but counsel has not commented one way or the other. ¶ 18. Setting aside the obvious relevance of these fields, there may be comments in the log schemas themselves relating to these "incognito" fields that have not been produced, including employee comments in the log proto-files about these fields.

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1   On March 11 (following the Rule 30(b)(6) deposition), Plaintiffs raised these issues with

2   the Special Master, explaining that the deficiencies are also relevant to the pending motion for an

3   order to show cause. The Special Master indicated that he did not object to Plaintiffs raising these

4   issues directly with the Court. ¶ 19.   That day, with a supplemental and belated schema

5   production, Google produced for the first time a version of the schema for the ███████████

6   log that showed the "is_chrome_non_incognito" field. ¶ 22.

7   Notably, although this log contains an "incognito" detection field, Google did not identify

8   this log to Plaintiffs and Special Master Brush. ¶ 22. Plaintiffs requested this log after learning

9   Bert Leung analyzed the log for his Chrome Incognito detection work and, in December, the

10   Special Master ordered that it be produced over Google's objection. ¶ 22. Even after being

11   compelled to produce this log, Google initially produced an incomplete version of the schema that

12   omitted the "is_chrome_non_incognito" field. ¶ 22.

13   On March 11, Google also produced for the first time a supplemental and belated schema

14   for Google's ████████████ log, another log used by Bert Leung. ¶ 23.   This schema

15   likewise   revealed   for   the   first   time   that   this   log   also   included   Google's

16   "is_chrome_non_incognito" field. ¶ 23.

17   Plaintiffs have, since March 11, tried to confer with counsel for Google multiple times

18   regarding discrepancies concerning the schema productions. ¶ 30. Google still will not (1) explain

19   what happened, (2) commit to producing full schemas for all logs identified during the Special

20   Master process, or (3) identify all logs that contain bits regarding Chrome Incognito usage. ¶ 30.

21   Google recently capitulated on insisting that only the 100-largest fields for schema be

22   produced. ¶¶ 21-22. Google has not explained why it is now able to produce schema larger than

23   what it previously provided with a tool that purportedly limited Plaintiffs to just the 100 largest

24   fields. *See id.*; Dkt. 430-21. Had Google produced full schema in the first instance, as requested

25   and as ordered, Plaintiffs would have discovered these "incognito" fields months ago.

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PLAINTIFFS' ADMINISTRATIVE MOTION TO FILE SUPPLEMENT
IN SUPPORT OF REQUEST FOR ORDER TO SHOW CAUSE
Case No. 4:20-cv-03664-YGR-SVK

SUPPLEMENTAL ANALYSIS

The Court's November 12 Order was clear. Dkt. 331. Google was required to identify all relevant logs and sources, i.e., "the tools to identify class members using Google's data." *Id.* at 4. Google's refusal to comply has prejudiced Plaintiffs' ability to obtain and seek preservation of relevant discovery. Plaintiffs' motion for an order to show cause was focused on Google's concealment of the "maybe_chrome_incognito" bit. Plaintiffs now seek to supplement with evidence that Google has been concealing *other* logs with *additional* bits for detecting incognito— including the "is_chrome_incognito" and "is_chrome_non_incognito" bits.

With respect to the schemas for the logs Google has identified, Google had argued to the Special Master that its redaction of fields was simply an unintended consequence of its ████ ████ tool producing schema for the "largest 100" fields. *See* Dkt. 430-21. According to Google, it would not produce schema containing all of the fields in some of these logs because there were over ████████ in these logs. ¶ 20. But Google had the lists of fields, and it could have readily turned them over to Plaintiffs. Google's claimed inadvertence is difficult to square with the facts.

First, Google only arbitrarily limited its schema productions to 100 fields for certain logs – which coincidentally include logs that contain these Google-created "incognito" fields. By contrast, Google produced ██ fields for the ████████ log. *See* Dkt. 430-1 ¶ 19.

Second, Google clearly had alternative methods of producing schemas with more than 100 fields. Google's March 11 production of schema for the ██ "maybe_chrome_incognito" logs built by Chris Liao, Bert Leung, and Mandy Liu show that Google did have such alternatives because the schema was finally populated with the incognito bit. ¶ 24.

Third, imposing an arbitrary "100 largest" fields filter necessarily omitted the relevant "incognito" fields. On March 8, pursuant to this Court's order, Plaintiffs deposed Google employee Mandy Liu, one of the employees who created the "maybe_chrome_incognito" field. Ex. 4, Liu Tr. 15:2-8. Ms. Liu explained that the "maybe_chrome_incognito" value is expressed as a Boolean bit, which means that it simply stores a "true" or "false" value. Ex. 4, Liu Tr. 19:24-

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20:8.[3] Storing this maybe_chrome_incognito value would take Google merely one bit. ¶ 28. Any numerical integer, in contrast, would require 32-bits of storage. ¶ 28.   In short, Google's "maybe_chrome_incognito" bit is far smaller than any other field containing a single number.   Similarly,   Dr.   Sadowski   testified   that   the   "is_chrome_incognito"   and "is_chrome_non_incognito" fields are also Boolean bits and therefore far smaller than the rest of the fields she identified. Ex. 3, Sadowski Tr. 91:2-8. Google's strategy of refusing to produce schema reflecting more than the "largest 100" fields thus virtually guaranteed that Google would withhold information regarding these single-bits Incognito detection fields. ¶ 29.

Google   had   every   opportunity   to   be   forthcoming   with   respect   to   the "is_chrome_non_incognito" being in the ███████████ and █████████████████ logs. It was not. And for the two logs that Google did identify that contain these bits, Google *removed* the "is_chrome_non_incognito" field from the logs' schema before producing the schema.[4]

Discovery is now closed. And yet Plaintiffs still do not have answers to multiple questions: Has Google actually identified all logs containing the term "incognito" in the field names? Has Google been redacting or removing fields from the production of Plaintiffs' data in the Special Master process? Has Google withheld relevant documents concerning these fields and log sources in the course of its ESI production? Had this information been fully and timely disclosed, the parties could have had an informed discussion about preservation to ensure that Google did not delete relevant data. Plaintiffs submit this supplement so that Google may respond to these questions, and this Court may consider them at the April evidentiary hearing.

Plaintiffs requested that Google stipulate to this administrative filing, and Google's counsel stated in response that they could "stipulate consistent with the court's order." Plaintiffs submit that this filing is consistent with the Court's order.

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[3] Ms. Liu also explained that ██ ████████████████████████████ Ex. 4, Liu Tr. 41:23-42:12.

[4] It is unclear if Google also removed the field from the Plaintiffs' data that has been produced. This question may be a proper subject of inquiry at the hearing.

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Dated: March 21, 2022

BOIES SCHILLER FLEXNER LLP

By /s/ Mark Mao

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DECLARATION OF MARK C. MAO ISO PLAINTIFFS' ADMINISTRATIVE MOTION TO FILE SUPPLEMENT IN SUPPORT OF THEIR REQUEST FOR ORDER REQUIRING GOOGLE TO SHOW CAUSE

Redacted Version of Document Sought to be Sealed

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                    UNITED STATES DISTRICT COURT
20   **NORTHERN DISTRICT OF CALIFORNIA**

21 CHASOM BROWN, WILLIAM BYATT,   Case No.: 4:20-cv-03664-YGR-SVK
    JEREMY DAVIS, CHRISTOPHER
22 CASTILLO, and MONIQUE TRUJILLO   **DECLARATION OF MARK C. MAO IN
    individually and on behalf of all similarly SUPPORT OF PLAINTIFFS'
23 situated,   ADMINISTRATIVE MOTION TO FILE
                                               SUPPLEMENT IN SUPPORT OF THEIR
24   REQUEST FOR ORDER REQUIRING
                Plaintiffs,   GOOGLE TO SHOW CAUSE**
25
    vs.
26   The Honorable Susan van Keulen
27   GOOGLE LLC,   Courtroom 6 - 4th Floor
                                               Date: April 21, 2022
28   Defendant.   Time: 10:00 a.m.

DECLARATION OF MARK C. MAO

I, Mark C. Mao, declare as follows.

1.   I am a partner with the law firm of Boies Schiller Flexner LLP, counsel for Plaintiffs in this matter. I am an attorney at law duly licensed to practice before all courts of the State of California. I have personal knowledge of the matters set forth herein and am competent to testify.

2.   I submit this Declaration in support of Plaintiffs' Administrative Motion to File Supplement in Support of Their Motion for Order Requiring Google to Show Cause Why It Should Not Be Sanctioned for Discovery Misconduct. (Dkt. 430).

3.   On February 26, 2022, Plaintiffs filed their Motion for an Order to Show Cause Why Google Should Not Be Sanctioned (Dkt. 430, the "Sanctions Motion").

4.   Since filing the Sanctions Motion, Plaintiffs have uncovered additional evidence of Google withholding relevant discovery regarding Google's identification of private browsing activity.

5.   While Plaintiffs' Sanctions Motion focused on Google's concealment of a "maybe_chrome_incognito" field that Google developed between 2020 and 2022, Plaintiffs have since discovered that Google also concealed Google's implementation of additional fields that Google has used to detect Chrome Incognito traffic since 2017, including (without limitation) "is_chrome_incognito" and "is_chrome_non_incognito."

6.   On October 5, 2021, Google produced a single-page design document relating to the *potential* use of ███████████████████████ The document suggested potentially logging ████████████████ ████████████████████████████████████ ████████████████████████████████████ ████████████████████████████████ GOOG-BRWN-00536949. A true and correct copy of this document is attached hereto as **Exhibit 1**.

7.   Notably absent from this single-page design document is any reference to the actual Google field name that would be implemented. Google was on notice of Plaintiffs' interest in the

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1   ██████████████████████████████████████ mode because Plaintiffs had,

2   in December, noticed the subject as a topic for the Google 30(b)(6) depositions.

3   8. Pursuant to the Court's November 12, 2021 Order on discovery (Dkt. 331), Google

4   was required to identify all relevant log sources that could contain Plaintiffs' data and information.

5   Google then provided a declaration from Andre Golueke (a Discovery Manager in Google's Legal

6   Department) confirming that Google had identified all relevant data sources, listed in Exhibit A to

7   that declaration (Dkt. 338).

8   9. Following the filing of the Sanctions Motions, Plaintiffs continued meeting and

9   conferring with Google, both with and without the supervision of the Special Master. During those

10 meet and confer discussions, Plaintiffs reiterated their request for full productions of schema and

11 fields used by Google, but Google refused.

12   10. After Plaintiffs learned about Google's withholding of discovery concerning

13 Google's "maybe_chrome_incognito" field, Plaintiffs pressed for what other "incognito" fields

14 Google may have been redacting from the schema.

15   11. When pressed about the proposal outlined in GOOG-BRWN-00536949 during the

16 Special Master process, Google still would not answer, insisting that it wanted to save the topic

17 for the 30(b)(6) deposition of Dr. Caitlin Sadowski, which was not until March 10.

18   12. On March 10, 2022, Plaintiffs deposed Dr. Sadowski.

19   13. During her testimony, Dr. Sadowski relied on a "Fact Sheet," which was marked as

20 Exhibit 2 for that deposition. A true and correct copy of that document is attached hereto as

21 **Exhibit 2**.

22   14. This "Fact Sheet" stated that Google had multiple, live logs containing fields with

23 the word "incognito," including "is_chrome_non_incognito" and "is_chrome_incognito." *See*

24 **Exhibit 2**.

25   15. The document identifies at least five logs that contain those fields, none of which

26 had previously been disclosed to Plaintiffs (or to the Court or Special Master Brush).

27   16. When Dr. Sadowski was asked to review the November 18, 2022 Declaration of

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1   Andre Golueke and the list of data sources attached thereto in Exhibit A, Dr. Sadowski testified

2   that the declaration did not list any of the five logs that contain either "is_chrome_non_incognito"

3   or "is_chrome_incognito." **Exhibit 3,** Sadowski Tr. 79:19-80:9.

4   17.   Despite Plaintiffs' multiple requests and meet and confer efforts, Google still has

5   not provided Google's schema for these additional logs containing the Chrome Incognito fields.

6   18.   Google's counsel also will not confirm how many logs it left out from the Special

7   Master process that contain the term "incognito" in a field name, or if Google made a full

8   production of all documentation relating to these log fields. Plaintiffs have also repeatedly asked

9   for confirmation that documentation around the omitted logs has been produced, but Google's

10 counsel has not commented one way or the other.

11   19.   On March 11, 2022, following the Rule 30(b)(6) deposition, Plaintiffs raised these

12 issues with the Special Master, explaining that the deficiencies are also relevant to the pending

13 motion for an Order to Show Cause, and the Special Master indicated that he did not object to

14 Plaintiffs raising these issues directly with the Court.

15   20.   Google had initially maintained that only the 100-largest fields for schema would

16 be produced. According to Google, the reason it would not produce schema containing all of the

17 fields in some of these logs is because there were over ███████ in these logs.

18   21.   Plaintiffs never agreed to this limitation, consistently requested schema containing

19 all of the fields in the logs, and Google has recently admitted that this alleged 100-largest field

20 limitation can be overcome.

21   22.   On March 11, 2022, Google produced more robust schema for the

22 ████████ log that showed the "is_chrome_non_incognito" field. This log, despite having

23 an "incognito" field, was not identified in the Declaration of Andre Golueke, Exhibit A (Dkt. 338).

24 Instead, after learning that Bert Leung had analyzed this log for his Incognito detection work,

25 Plaintiffs in December requested this log, and the Special Master ordered Google to produce it

26 (over Google's objection). Even after being compelled to produce this log, Google still initially

27 produced an incomplete version of the schema that omitted the "is_chrome_non_incognito" field.

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23.   On March 11, 2022, Google produced for the first time a more complete schema for the ███████████ log, another log used by Bert Leung. This schema likewise revealed for the first time that this log also included the "is_chrome_non_incognito" field.

24.   On March 11, 2022, Google also produced schema for █ logs containing the "maybe_chrome_incognito" field relied on by Chris Liao, Bert Leung, and Mandy Liu, further demonstrating that Google has alternatives to produce schema with fields containing "incognito."

25.   On March 8, 2022, pursuant to the Court's order, Plaintiffs deposed Google employee Mandy Liu, who is one of the Google employees who created the "maybe_chrome_incognito" field. *See* **Exhibit 4** (excerpts from Liu transcript).

26.   Ms. Liu testified that the "maybe_chrome_incognito" field value is expressed as a Boolean bit, which means that it simply stores a "true" or "false" value. **Exhibit 4**, Liu Tr. 19:24-20:8. Ms. Liu further testified that Google could run a query for all log entries in which "maybe_chrome_incognito" is set to true. **Exhibit 4**, Liu Tr. 41:23-42:12.

27.   Dr. Sadowski similarly testified that the "is_chrome_incognito" and "is_chrome_non_incognito" field values are stored as "true" or "false." **Exhibit 3**, Sadowski Tr. 91:2-8.

28.   Because these fields store only a "true" or "false" value, the fields only use one bit to express that value. Other fields that contain a numerical integer, for example, would require at least 32 bits of storage.

29.   Because a single bit field value is substantially smaller than any field value with an integer (*i.e.*, 1 bit versus 32 bits), the "maybe_chrome_incognito" bit would necessarily be smaller than any field containing an integer, and it would therefore not be represented in the 100-largest fields that Google previously offered for schema.

30.   Plaintiffs have tried to confer with Google's counsel multiple times regarding the discrepancies concerning Google's schema productions. Google's counsel still will not commit to producing full schemas for the logs identified during the Special Master process or identify all logs that stored bits regarding Chrome Incognito usage.

31.   Attached hereto as **Exhibit 1** is a true and correct copy of a document Google produced in discovery labeled GOOG-BRWN-00536949. The document was produced on October 5, 2021.

32.   Attached hereto as **Exhibit 2** is a true and correct copy of a document Google produced during the deposition of Dr. Caitlin Sadowski, marked as Exhibit 2 to that deposition.

33.   Attached hereto as **Exhibit 3** are excerpts from the transcript of the deposition of Dr. Caitlin Sadowski conducted on March 10, 2022.

34.   Attached hereto as **Exhibit 4** are excerpts from the transcript of the deposition of Ms. Mandy Liu conducted on March 8, 2022.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed this 21st day of March, 2022, at San Francisco, California.

/s/ Mark C. Mao

EXHIBIT 1

Redacted in its Entirety

EXHIBIT 2

Redacted in its Entirety

EXHIBIT 3

Redacted Version of Document Sought to be Sealed

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 1               IN THE UNITED STATES DISTRICT COURT

 2          FOR THE NORTHERN DISTRICT OF CALIFORNIA

 3                     SAN JOSE DIVISION

 4                        ---o0o---

 5   CHASOM BROWN, et al.,            )

     on behalf of themselves and     )

 6   all others similarly            )

     situated,                       )

 7                                   )

             Plaintiffs,             )Case No.

 8                                   )5:20-cv-03664-LHK

     vs.                             )

 9                                   )

     GOOGLE LLC,                     )

10                                   )

             Defendant.              )

11   _____)

12

13                        ---o0o---

14             Videotaped Zoom Deposition of

15                DR. CAITLIN SADOWSKI

16                     CONFIDENTIAL

17             Thursday, March 10, 2022

18                        ---o0o---

19

20

21

22

23   Katy E. Schmidt

24   RPR, RMR, CRR, CSR 13096

25   Veritext Job No.: 5130524
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 1              MR. MCGEE:  Actually, I'd like to go off the    03:56

 2    record right now.                                         03:56

 3              MR. ANSORGE:  Okay.  Let's go off the record.   03:56

 4              THE VIDEOGRAPHER:  We're now going off the      03:56

 5    record.  The time is 3:56 p.m.                            03:56

 6                   (Break taken in proceedings.)              03:56

 7              THE VIDEOGRAPHER:  We are now back on the        04:15

 8    record.  The time is 4:15 p.m.                            04:15

 9                        (Plaintiffs' Exhibit 2 was            04:15

10                        marked for identification.)          04:15

11    BY MR. MCGEE:                                             04:15

12       Q.   Dr. Sadowski, when we went off the record, we     04:15

13    were provided what I've marked as Exhibit 2.             04:15

14              Is that the document that you referenced was    04:15

15    the fax sheet?                                            04:15

16       A.   I should look at the drive folder and see.        04:15

17              Okay.  I see something called Exhibit 2.  I am  04:16

18    opening it now.                                           04:16

19       Q.   Great.  Thank you.                                04:16

20       A.   Yes.  This document is what I had referred to     04:16

21    as, I believe, reference sheet.                          04:16

22       Q.   Okay.  And the third line it says "No fields      04:16

23    named" and in bold "not_Chrome_incognito or              04:16

24    Chrome_non_incognito."                                   04:16

25              What is that reference, the "No fields named"?  04:16
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1   What does that mean?   04:16

2   A.   I mentioned I use our internal code search   04:16

3   tool to look up these two field names, and they did not   04:16

4   appear.   04:16

5   Q.   Okay. So it's your testimony that with the   04:16

6   internal code search tool, the ==not underscore Chrome==   04:16

7   ==underscore incognito== search term did not return any   04:17

8   results?   04:17

9   A.   Yes. When I looked at -- when I did a search   04:17

10   for ==not underscore Chrome underscore incognito== across   04:17

11   Google's multibillion line repository that I have access   04:17

12   to internally, I did not get any search results.   04:17

13   Q.   Do you know what data sources that tool   04:17

14   searches over?   04:17

15   MR. ANSORGE: Objection. Vague and out of   04:17

16   scope.   04:17

17   BY MR. MCGEE: 04:17

18   Q.   You can answer.   04:17

19   A.   The code search tool searches over a   04:17

20   multibillion line code base. That's the main code base   04:17

21   that is used at Google.   04:17

22   Q.   Okay. Let me ask it this way: 04:18

23   Are there any data sources that would not be   04:18

24   searched by that tool?   04:18

25   MR. ANSORGE: Objection. Vague.   04:18

                                                        Page 19

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 1            THE WITNESS:  There are millions or billions    04:18

 2    of data sources in the world.  Many of them would not be   04:18

 3    searched via that tool.                                 04:18

 4    BY MR. MCGEE:                                           04:18

 5        Q.   Okay.  Let me ask it this way:               04:18

 6             Within Google, are there any data sources that   04:18

 7    that tool would not search?                             04:18

 8             MR. ANSORGE:  Objection.  Vague, and out of    04:18

 9    the scope.                                              04:18

10             THE WITNESS:  Yes.                             04:18

11    BY MR. MCGEE:                                           04:18

12        Q.   What sources are those?                       04:18

13        A.   There are many.  One example is the chromium    04:18

14    open source repository, which any -- anyone externally    04:18

15    can also search over.                                   04:19

16        Q.   Okay.  What other sources would it not search    04:19

17    within Google?                                          04:19

18             MR. ANSORGE:  Same objection.                 04:19

19             THE WITNESS:  My e-mail.                       04:19

20    BY MR. MCGEE:                                           04:19

21        Q.   Okay.                                          04:19

22        A.   As an example.                                04:19

23        Q.   What other data sources?                      04:19

24        A.   The --                                         04:19

25             MR. ANSORGE:  Same objection.                 04:19
```

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1	THE WITNESS: -- e-mail of -- oh -- other	04:19
2	e-mails.	04:19
3	BY MR. MCGEE:	04:19
4	Q. What other data source would it not search	04:19
5	over?	04:19
6	A. Documents in a drive folder.	04:19
7	Q. Would it search all log files?	04:19
8	MR. ANSORGE: Objection. Vague, and out of	04:19
9	scope.	04:20
10	THE WITNESS: Code search does not search over	04:20
11	log files. Code search searches over source code.	04:20
12	BY MR. MCGEE:	04:20
13	Q. Okay. Would it search over proto files?	04:20
14	MR. ANSORGE: Objection. Vague.	04:20
15	THE WITNESS: It would search over proto	04:20
16	definitions.	04:20
17	BY MR. MCGEE:	04:20
18	Q. Would it search all available proto	04:20
19	definitions or is it a subset?	04:20
20	MR. ANSORGE: Objection. Calls -- objection.	04:20
21	Calls for speculation and out of scope.	04:20
22	THE WITNESS: It would search over all	04:20
23	proto definitions in Google's main repository.	04:20
24	BY MR. MCGEE:	04:20
25	Q. Okay. Let me ask it this way:	04:20

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1   If there was a field in a log file that had   04:21

2   not underscore Chrome underscore incognito but that same   04:21

3   not underscore Chrome underscore incognito did not have   04:21

4   a field or a proto definition, would your internal code   04:21

5   search tool return results for that search term?   04:21

6   MR. ANSORGE: Objection. Form, and incomplete   04:21

7   hypothetical.   04:21

8   THE WITNESS: I could create a proto field on   04:21

9   my local machine with any field names that I want, and   04:21

10   create a proto -- a proto file for testing with some   04:21

11   kind of -- or on the machine that I do work -- work at.   04:21

12   So you could create a specific proto with an arbitrary   04:21

13   name and log that specific proto.   04:22

14   BY MR. MCGEE: 04:22

15   Q.   Okay. Let me ask you this: 04:22

16   Are all proto fields -- do they all have   04:22

17   descriptions at Google?   04:22

18   MR. ANSORGE: Objection. Vague and   04:22

19   foundation, and out of the scope.   04:22

20   THE WITNESS: I have not seen all proto fields   04:22

21   at Google.   04:22

22   BY MR. MCGEE: 04:22

23   Q.   All right. Are there proto fields that you've   04:22

24   seen at Google that did not have descriptions?   04:22

25   A.   Yes. But it also depends on what you mean by   04:22

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1	description. I am assuming that you are referring to a	04:22
2	code comment directly above the name of the field. I	04:23
3	have seen proto fields at Google that do not have a code	04:23
4	comment directly above the name of the field.	04:23
5	Q. Okay.	04:23
6	A. Typically in those cases the name of the field	04:23
7	is descriptive.	04:23
8	Q. So if not underscore Chrome underscore	04:23
9	incognito did not have what you just described, would it	04:23
10	still -- would your internal code search tool return any	04:23
11	results for it?	04:23
12	MR. ANSORGE: Objection. Form, and calls for	04:23
13	speculation, and out of scope.	04:23
14	THE WITNESS: If there was a proto field in	04:23
15	the main Google repository that had a particular name,	04:23
16	that field would be returned when searching for it,	04:23
17	regardless of whether there was a comment in the code	04:23
18	next to the field.	04:24
19	BY MR. MCGEE:	04:24
20	Q. Okay. Let me ask it more on a broad level.	04:24
21	Your search for the not underscore Chrome	04:24
22	underscore incognito with the internal code search tool,	04:24
23	you said it did not return any results.	04:24
24	Is that correct?	04:24
25	A. That is correct.	04:24

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1   Q.   Are there any other ways that you could search   04:24

2   to see if the not underscore Chrome underscore incognito   04:24

3   search term exists within any -- exists at Google?   04:24

4   So just to give you an example, I understand   04:24

5   that you're saying that the internal code search tool is   04:24

6   limited in what it can return because of the limitations   04:24

7   that you just described.   04:24

8   Are there other ways to search for that not   04:24

9   underscore Chrome underscore incognito at Google?   04:25

10   MR. ANSORGE: Objection.   Form.   Compound.   04:25

11   And out of the scope.   04:25

12   THE WITNESS: I could -- there are always ways   04:25

13   to search for something.   I could, for example, navigate   04:25

14   to a doc in my drive folder and search over that doc.   04:25

15   I could use public Google search and search for that   04:25

16   term -- for that string rather, just, you know, not   04:25

17   anything that's Google internal but something that's   04:25

18   visible equally outside of Google.   04:25

19   As I mentioned, there are other repositories,   04:25

20   like the chromium open source repository.   There could   04:25

21   be other code or documents at Google that I do not have   04:25

22   access to.   Over the main multibillion line repository,   04:25

23   I did not see a field with that name.   04:26

24   BY MR. MCGEE: 04:26

25   Q.   Okay.   For -- okay.   What dashboards are   04:26

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1	going to belabor the questions. They're the same. I	05:49
2	won't even ask them to you.	05:49
3	So if you can turn to Exhibit 14, please.	05:49
4	A. I still see 12 as the top one so...	05:49
5	Q. Oh, okay.	05:49
6	A. Just a minute. I'm reloading.	05:49
7	Q. Yeah. No problem.	05:49
8	A. Okay. I see something called Exhibit 14. I'm	05:50
9	opening it.	05:50
10	I see what appears to be a shorts design	05:50
11	document that starts with ███████████████	05:50
12	███████████████████████████	05:50
13	Q. Have you ever seen this design document	05:50
14	before?	05:50
15	A. Yes.	05:50
16	Q. When?	05:50
17	A. In preparation for this deposition.	05:50
18	Q. Did you speak with anybody in preparation for	05:50
19	this deposition about this design document?	05:50
20	A. Yes.	05:50
21	Q. Who, aside from your lawyers?	05:50
22	A. Quentin Fiard.	05:50
23	Q. And what department is Quentin Fiard with in	05:50
24	Google?	05:51
25	A. I don't remember what he works on right now,	05:51

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1	but he used to work on ████ in -- on ████ at the	05:51
2	time this document was produced.	05:51
3	Q. Okay. And why did you choose to speak with	05:51
4	Quentin Fiard about this document?	05:51
5	A. From the comment threads in the document, it's	05:51
6	clear that he is the person who is most knowledgeable	05:51
7	about the document.	05:51
8	Q. Okay. Did you speak with anyone else whose	05:51
9	identity is reflected in this document?	05:51
10	MR. ANSORGE: Objection. Form, and vague.	05:51
11	THE WITNESS: In the comments I see a	05:51
12	selection of four different user names.	05:51
13	Are you asking about that set of four user	05:52
14	names?	05:52
15	MR. MCGEE: Yes.	05:52
16	THE WITNESS: Quentin Fiard I spoke to in	05:52
17	preparation for this deposition, and not previously.	05:52
18	The only other user name that I recognize is	05:52
19	msramek.	05:52
20	BY MR. MCGEE:	
21	Q. And who is that?	05:52
22	A. He has Chrome's privacy working group. We	05:52
23	have a close relationship because we take user privacy	05:52
24	very seriously, and we talk to the privacy working group	05:52
25	whenever there is anything that comes up related to	05:52

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1	privacy that we have questions about and to ensure that	05:52
2	we are upholding all the privacy policies that Google as	05:52
3	a company supports and that we want to be supporting as	05:52
4	a team.	05:53
5	Q. And what is that person's name?	05:53
6	A. Martin Sramek.	05:53
7	Q. Do you know how to spell Martin's last name?	05:53
8	A. I believe it is S-r-a-m-e-k. The same as in	05:53
9	this user name.	05:53
10	Q. Okay. And what is this design document? What	05:53
11	is it talking about?	05:53
12	MR. ANSORGE: Objection. Vague, and form.	05:53
13	THE WITNESS: Reading from the design	05:53
14	document:	05:53
15	██████████████████████████	05:53
16	████████████████████████████	05:53
17	████████████████ █████████████	05:53
18	██████████████████████	05:53
19	██████████████████████████	05:53
20	████████████	05:53
21	Do you -- would you like me to keep reading?	05:54
22	MR. MCGEE: I thank you for pausing. I would	05:54
23	not like you to keep reading.	05:54
24	BY MR. MCGEE:	05:54
25	Q. Does this design document relate to any	05:54

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1	particular bit?	05:54
2	Well, let me back that up.	05:54
3	Are you familiar with something within Google	05:54
4	being described as a bit or a field?	05:54
5	MR. ANSORGE: Objection. Vague and compound.	05:54
6	THE WITNESS: Many things within Google are	05:54
7	described as a bit or a field, either colloquially or	05:54
8	exactly. At some level ultimately your computer is just	05:54
9	a sequence of bits.	05:54
10	MR. MCGEE: Right. Ones and zeros.	05:54
11	BY MR. MCGEE:	05:54
12	Q. But a field in a log, are you familiar with	05:54
13	that description or colloquialism at Google?	05:54
14	MR. ANSORGE: Objection. Vague, and out of	05:55
15	scope.	05:55
16	THE WITNESS: Yes.	05:55
17	BY MR. MCGEE:	05:55
18	Q. And does this design document relate to any	05:55
19	field or fields at Google?	05:55
20	A. Yes.	05:55
21	Q. Which?	05:55
22	A. I'm reading from my reference sheet to make	05:55
23	sure I get it right.	05:55
24	This design document is related to the	05:55
25	is underscore Chrome underscore non underscore incognito	05:55

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1	underscore mode.	05:55
2	Q. And how do you know that?	05:55
3	A. Because the source code for that particular	05:56
4	field, as you say, has a link to this design document	05:56
5	and says that it is -- annotation that it is	05:56
6	specifically limited to ██████ logs.	05:56
7	Q. And what is an ██████ log?	05:56
8	A. ████████████████████████, is my	05:56
9	understanding.	05:56
10	Q. And are they keyed by any particular	05:56
11	identifiers?	05:56
12	MR. ANSORGE: Objection. Vague, and out of	05:56
13	the scope.	05:56
14	BY MR. MCGEE:	05:56
15	Q. You can answer.	05:56
16	A. There is a -- looking at my reference sheet,	05:57
17	there is a set of ██████ logs that is not GAIA keyed	05:57
18	and there are some ██████ logs that are Zwieback or	05:57
19	███████████████.	05:57
20	Q. Okay. And I see that from your reference	05:57
21	sheet.	05:57
22	When you say that the is underscore Chrome	05:57
23	underscore non underscore incognito is non-GAIA keyed,	05:57
24	what does that mean? How would you explain that?	05:57
25	A. Sorry. There was a beep when you were talking	05:57

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1    so I -- part of it cut off.                        05:57

2         Q.   Sure.                                    05:57

3              I'm asking -- let me mute my computer -- your   05:57

4    colleagues were e-mailing me.                      05:57

5              The is underscore Chrome underscore non   05:57

6    underscore incognito, you said that it's not GAIA keyed.   05:57

7              What do you mean by that?                 05:58

8         A.   I did not say that is underscore Chrome   05:58

9    underscore non underscore incognito underscore mode is   05:58

10   not GAIA keyed.  You had asked about ▮▮▮▮ logs.     05:58

11        Q.   Okay.  Let me just then back it up.       05:58

12             On your information sheet, Notice 2, Topic 10,   05:58

13   there are -- there appear to be two field names or --   05:58

14   let me back it up so we're speaking the same language.   05:58

15             What would you consider the is underscore   05:58

16   Chrome underscore non underscore incognito -- how --   05:58

17   what -- how would someone at Google describe that?  Is   05:58

18   it a field?  Is it a field name?  Is it a bit?  I'm   05:59

19   trying to understand that.  What's the jargon that   05:59

20   someone at Google would use to refer to those?     05:59

21             MR. ANSORGE:  Objection.  Compound.       05:59

22             THE WITNESS:  I think there are many different   05:59

23   ways someone at Google might use to refer to those.   05:59

24   There is multiple jargon we could call it.          05:59

25             So I would say that is underscore Chrome   05:59
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1	<mark>underscore non underscore incognito underscore</mark> mode is	05:59
2	a binary field that is specifically used only in temp	05:59
3	████ logs.	05:59
4	BY MR. MCGEE:	05:59
5	Q. And why is it only in temp ████ logs?	05:59
6	A. It was a field that was created by the ████	06:00
7	team to help them understand potential problems with	06:00
8	their product location and where searching so that they	06:00
9	could develop the best product possible for Google	06:00
10	users.	06:00
11	Q. Okay. And it -- there's a note here that it	06:00
12	was introduced in 2017, but then the project wrapped up	06:00
13	in June of 2018.	06:00
14	Is that binary field still implemented at	06:00
15	Google?	06:00
16	MR. ANSORGE: Objection. Vague.	06:00
17	THE WITNESS: That binary field is -- still	06:00
18	exists as a binary field in and only in ████ logs.	06:00
19	BY MR. MCGEE:	06:01
20	Q. Are values written to that binary field in	06:01
21	████ logs?	06:01
22	A. Yes. I believe values are written to that	06:01
23	binary field in ████ logs.	06:01
24	Q. So even though the project wrapped in June of	06:01
25	2018, that is still an actively used binary field?	06:01

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 1              MR. ANSORGE:  Objection.  Form.                06:01

 2              THE WITNESS:  As I understand it, it is not    06:01

 3    actively used.  It is still being written.  It is not   06:01

 4    being reviewed.                                          06:01

 5    BY MR. MCGEE:                                            06:01

 6        Q.   Can you please clarify what you mean by "not    06:01

 7    being reviewed"?                                         06:01

 8        A.   So from talking to Quentin, this field went    06:02

 9    into a particular dashboard that the ████    team used  06:02

10    to identify situations where they are not getting a     06:02

11    location header but should be getting a location header. 06:02

12    And if a -- in situations where an X-Client-Data header 06:02

13    is not sent, they would also expect a location header to 06:02

14    not be sent in most situations like that.                06:02

15              So if there is an X-Client-Data header but     06:02

16    there's no location header, then that's potentially      06:02

17    indicative of a bug in the system.                       06:02

18              So they have a dashboard that shows, you know, 06:02

19    how often that occurs and they could look at to, you     06:02

20    know, minimize the amount of times where a location      06:02

21    header should be sent but isn't sent.  And they use that 06:03

22    dashboard to improve the product in this 2017-2018 time  06:03

23    range.                                                   06:03

24              And from talking to Quentin, my understanding  06:03

25    is there's -- they're not actually looking at that       06:03
```

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1   particular graph anymore in the normal course of   06:03

2   operations for the team.   06:03

3   Q.   But if they pulled up the graph, there would   06:03

4   be responsive data that would fill in the graph;   06:03

5   correct?   06:03

6   MR. ANSORGE: Objection.   Vague, and calls for   06:03

7   a legal conclusion.   06:03

8   THE WITNESS: I don't know what you mean by   06:03

9   responsive data that would fill in the graph.   06:03

10   BY MR. MCGEE: 06:03

11   Q.   Sure.   06:03

12   So you're saying they aren't looking at the   06:03

13   graph anymore.   They're not reviewing it.   06:03

14   What I'm asking is: Is if they did pull up   06:04

15   the graph, the graph would still have lines or bars or   06:04

16   whatever visual representation or graphical   06:04

17   representation the graph was designed to display.   06:04

18   Is that fair?   06:04

19   MR. ANSORGE: Objection.   Compound.   Form.   06:04

20   THE WITNESS: My understanding is that is   06:04

21   underscore Chrome underscore non underscore incognito   06:04

22   underscore mode is a field that is being filled in in   06:04

23   UMA -- not UMA -- not in UMA logs.   It is not in UMA   06:04

24   logs, to be clear.   It is only in ██████ logs.   And it 06:04

25   is a field that is still being filled in in ██████ logs   06:04

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1   today, despite the fact that the reason the field was   06:04

2   introduced has passed.   06:04

3   BY MR. MCGEE: 06:05

4   Q.   Okay. And from your fact sheet, the   06:05

5   is underscore Chrome underscore non underscore   06:05

6   incognito -- so without the underscore mode --   06:05

7   THE COURT REPORTER: I'm so sorry, Counsel.   06:05

8   Can you start that question over? There was a little   06:05

9   bit of feedback. I didn't get it.   06:05

10   MR. MCGEE: Sure.   06:05

11   BY MR. MCGEE: 06:05

12   Q.   So the -- you've got two bullet points in your   06:05

13   fact sheet.   06:05

14   One is the is underscore Chrome underscore   06:05

15   non underscore incognito, no GAIA.   06:05

16   What does that mean?   06:05

17   A.   What that means is that the -- these ███   06:05

18   logs that have this field set are not GAIA keyed. They   06:05

19   have location information. And then this is a Boolean   06:05

20   field, so it would be true or false. And there's the   06:06

21   location information, plus the Boolean field in the   06:06

22   ███ temp logs.   06:06

23   Q.   Got it.   06:06

24   A.   And not -- notably not GAIA IDs.   06:06

25   Q.   Understood.   06:06

                                                     Page 73

1	And then in is underscore Chrome underscore	06:06
2	incognito, there are either Zwieback or ▮▮▮▮▮▮	06:06
3	▮▮▮▮▮▮▮▮▮▮?	06:06
4	A. To be clear --	06:06
5	MR. ANSORGE: Objection. Form.	06:06
6	THE WITNESS: There are not Zwieback or	06:06
7	▮▮▮▮▮▮▮▮▮▮▮ inside is underscore Chrome	06:06
8	underscore incognito. I believe that is the name of a	06:06
9	field that is in the logs listed on this reference sheet	06:07
10	below. Those logs have a Zwieback or ▮▮▮▮▮▮▮▮▮	06:07
11	in them, as well as this field.	06:07
12	BY MR. MCGEE:	06:07
13	Q. Do you know what other identifiers exist in	06:07
14	the GFS temp slash -- okay. Let me just -- I'm not even	06:07
15	going to read it out for you.	06:07
16	But what other identifiers exist in the first	06:07
17	sub-bullet point of the is underscore Chrome underscore	06:07
18	non underscore incognito list there?	06:07
19	MR. ANSORGE: Objection. Vague. Out of the	06:07
20	scope, and foundation.	06:07
21	THE WITNESS: I am not familiar with the full	06:07
22	set of things that is in this -- in that log. I can	06:07
23	tell you there is not an un-obfuscated GAIA ID. I can	06:08
24	also tell you that there is no direct mapping of this to	06:08
25	UMA. So there is no UMA client ID or a way to somehow	06:08

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1   combine this with UMA data.   06:08

2   MR. MCGEE: I think we've been going for about 06:08

3   40 minutes now. I just need to take a break so --   06:08

4   MR. ANSORGE: Yeah. I'm fine with that.   06:08

5   Could we get a time count as well? How much 06:08

6   time is left on the record?   06:08

7   THE VIDEOGRAPHER: Yeah. So off the record? 06:08

8   MR. MCGEE: Yes. Off the record.   06:08

9   THE VIDEOGRAPHER: Okay. We're now going off 06:08

10   the record. The time is 6:08 p.m.   06:08

11   (Break taken in proceedings.)   06:17

12   THE VIDEOGRAPHER: We are now back on the   06:17

13   record. The time is 6:18 p.m.   06:17

14   BY MR. MCGEE: 06:18

15   Q.   Dr. Sadowski, for the bits that we were -- or 06:18

16   excuse me -- the binary fields that we were just talking 06:18

17   about, the is underscore Chrome underscore non   06:18

18   underscore incognito underscore mode, is underscore   06:18

19   Chrome underscore non-underscore incognito, and   06:18

20   is underscore Chrome underscore incognito, do you know 06:18

21   what logic is being used to derive the values that are 06:18

22   stored in those binary fields?   06:18

23   MR. ANSORGE: Objection. Vague and compound. 06:18

24   THE WITNESS: I believe the is underscore   06:18

25   Chrome underscore non underscore incognito is referring 06:18

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1	to the same thing as is underscore Chrome underscore non	06:18
2	underscore incognito underscore mode. I do know about	06:18
3	how that field is filled in.	06:19
4	BY MR. MCGEE:	06:19
5	Q. Okay. And what's the logic for filling in	06:19
6	that field?	06:19
7	A. It looks specifically at whether there is an	06:19
8	X-Client -- X hyphen Client hyphen Data header in the	06:19
9	request that is sent.	06:19
10	Q. Is there any other thing that it looks for or	06:19
11	is that all that it looks for?	06:19
12	A. I believe that is all that it looks for. The	06:19
13	is underscore Chrome underscore non underscore incognito	06:19
14	underscore mode is if there is a X-Client-Data --	06:19
15	X-Client-Data header sent, then that is the logic used	06:20
16	to set that to true.	06:20
17	This is a proxy for incognito, but it is not	06:20
18	a what I would call a reliable or accurate way to	06:20
19	determine incognito usage.	06:20
20	Q. Okay. And what's the -- what types of traffic	06:20
21	is this logic being applied to? Is it mobile traffic?	06:20
22	Is it -- you know, is it platform specific?	06:20
23	MR. ANSORGE: Objection. Vague and compound.	06:20
24	THE WITNESS: It is in ▮▮▮▮▮ logs ▮▮▮▮▮▮▮	06:21
25	▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮. I believe it will be	06:21

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1	cross-platform, but I do not know for certain. I would	06:21
2	have to investigate.	06:21
3	BY MR. MCGEE:	06:21
4	Q. Who would you speak with at Google to	06:21
5	investigate that?	06:21
6	A. I would speak again with Quentin Fiard if I	06:21
7	had a question about the -- this particular field in	06:21
8	Oolong logs.	06:21
9	Q. Okay. And then I did this backwards but --	06:21
10	apologies.	06:21
11	I can -- I've introduced two new exhibits.	06:21
12	They're going to be 16 and 15.	06:22
13	(Plaintiffs' Exhibits 15 and 16	06:22
14	were marked for identification.)	06:22
15	BY MR. MCGEE:	06:22
16	Q. But I'd actually like you to look at 16 first.	06:22
17	A. 16 first? Okay. I'm waiting for it to load.	06:22
18	Q. Thank you.	06:22
19	A. One other thing to answer your question.	06:22
20	To the best of my knowledge the is underscore	06:22
21	Chrome underscore incognito field is derived from the	06:22
22	is underscore Chrome underscore non underscore incognito	06:22
23	underscore mode. It is still depending on X-Client-Data	06:22
24	header logic and also looking at the user agent, but it	06:22
25	is not derived through some other mechanism than	06:22

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1	presence or absence of X-Client-Data header, and	06:23
2	suffers from the same limitations.	06:23
3	Q. So for the is underscore Chrome underscore	06:23
4	non underscore incognito, does that look -- you	06:23
5	mentioned user agent.	06:23
6	Does that one look at user agent?	06:23
7	A. To the best of my recollection, it does not.	06:23
8	It is looking at whether there is an X-Client-Data	06:23
9	header with the assumption that it would be coming from	06:23
10	Chrome if that header shows up. That assumption could	06:23
11	be false, but I would -- Chrome is the browser that use	06:23
12	that header.	06:23
13	Q. So then why does is underscore Chrome	06:23
14	underscore incognito look at a user agent in addition to	06:23
15	the X-Client-Data header?	06:24
16	MR. ANSORGE: Objection. Vague.	06:24
17	THE WITNESS: If you are looking at -- so if	06:24
18	you have an X-Client-Data header, that implies that it's	06:24
19	coming from Chrome. The absence of an X-Client-Data	06:24
20	header does not -- in some kind of data sense does not	06:24
21	have the same implication.	06:24
22	BY MR. MCGEE:	06:24
23	Q. Okay.	06:24
24	A. Should I look at Exhibit 16?	06:24
25	Q. Yes, please. Exhibit 16.	06:24

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1	Actually --	06:24
2	A. There --	06:25
3	Q. -- I'm really sorry. Can you look at	06:25
4	Exhibit 15, please?	06:25
5	A. Okay. I see a document at the top in blue it	06:25
6	says "Document 338," and it starts with "In The	06:25
7	United States District Court For The Northern District	06:25
8	of California, San Jose Division."	06:25
9	Q. Have you ever seen this document before?	06:25
10	A. The preamble looks unfamiliar. I am scrolling	06:25
11	down.	06:25
12	This document looks unfamiliar.	06:26
13	Q. Okay. Do you know who Andre Goleuke is,	06:26
14	G-o-l-e-u-k-e? I apologize if I mispronounced that.	06:26
15	MR. ANSORGE: Objection. Out of the scope.	06:26
16	BY MR. MCGEE:	06:26
17	Q. You can answer.	06:26
18	A. No, I do not.	06:26
19	Q. Okay. If you'll turn to what was attached as	06:26
20	Exhibit A.	06:26
21	The logs you identified under "Fact Sheet,"	06:26
22	under "Notice 1, Topic 10," do any of those logs or data	06:26
23	sources appear in Exhibit A, whether directly or by any	06:26
24	other name?	06:27
25	MR. ANSORGE: Objection. Vague. Compound.	06:27

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1	Foundation, and out of the scope.	06:27
2	THE WITNESS: I do not see those -- the --	06:27
3	those particular strings in this document. I am not	06:27
4	familiar with many of the names in this document or how	06:27
5	it was generated. I just saw it. So I cannot answer	06:27
6	the "by any other" name parts.	06:27
7	But this document -- I do not see the word	06:27
8	▨ in this document, and the log sources you were	06:27
9	referencing were ▨ logs.	06:28
10	BY MR. MCGEE:	06:28
11	Q. Okay. So by way of example, if we go to the	06:28
12	sixth page of the document itself -- there's eight	06:28
13	pages -- there's a ▨	06:28
14	That -- is there any possibility that the	06:28
15	first log source that's listed under the first bullet	06:28
16	point could be referred to as ▨?	06:28
17	MR. ANSORGE: Objection. Vague.	06:28
18	Mischaracterizes the evidence and foundation. And out	06:28
19	of scope.	06:28
20	BY MR. MCGEE:	06:28
21	Q. You can answer.	06:28
22	A. Your question was whether the specific strings	06:28
23	representing log sources listed in the reference sheet	06:29
24	would be referred to as ▨?	06:29
25	Q. By way of example. Sure.	06:29

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1	A. I would be very surprised.	06:29
2	Q. Okay.	06:29
3	A. If someone referred to those as ██████████,	06:29
4	I would expect someone to refer to them as ██████ logs	06:29
5	or have the word ████████ in the name. That is the name	06:29
6	used to refer to logs for that particular product and	06:29
7	they are only for ██████.	06:29
8	Q. Okay. And if I can draw your attention to	06:29
9	Exhibit 16.	06:29
10	A. But I'm not going to speculate what other	06:29
11	people could refer to something as. I would refer to	06:30
12	them as ██████ logs, and would generally expect that	06:30
13	people would refer to them as ██████ logs or with the	06:30
14	word ████████ in the name.	06:30
15	I have a document that says "Contains	06:30
16	Information Designated 'Highly Confidential Attorneys'	06:30
17	Eyes Only'" as the -- in quotes as the top line and then	06:30
18	a lot of names.	06:30
19	Q. Okay. And I'm presenting it to you. There's	06:30
20	a lot of instructions. But on the sixth page of the	06:30
21	document, and it is a "6" at the bottom, there's a	06:30
22	topic. And I'd represent that this is the topic that	06:30
23	you were designated for but I don't believe --	06:30
24	And there's a carve-out, and Mr. Ansorge -- or	06:30
25	excuse me -- Dr. Ansorge will describe the carve-out.	06:30

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1	But that you've been partially designated to	06:30
2	testify on this topic.	06:31
3	And I apologize, the lights in my office went	06:31
4	out.	06:31
5	MR. ANSORGE: Dr. Sadowski is designated for	06:31
6	the ==is underscore Chrome underscore incognito== field, for	06:31
7	the ==not underscore Chrome underscore incognito== field,	06:31
8	and for the ==Chrome underscore non underscore incognito==	06:31
9	field. She's not designated for the	06:31
10	==maybe_Chrome_incognito== field, nor for anything else	06:31
11	that's covered by this topic, and all the questions that	06:31
12	relate to ==maybe_Chrome_incognito== field or dashboard	06:31
13	fields on that are out of the scope.	06:31
14	MR. MCGEE: Okay. But to be clear, Mr. --	06:31
15	Dr. -- I -- it's late.	06:31
16	Dr. Ansorge, it's -- part of the topic	06:31
17	includes why Google developed, implemented, and used any	06:31
18	such bit or field. Also includes the log or traffic	06:31
19	sources, as well as the design used to determine the bit	06:32
20	or field, as well as any logs or data sources where such	06:32
21	a bit or field is used and how it is used.	06:32
22	So I understand she's not designated for	06:32
23	==maybe underscore Chrome underscore incognito==, but for	06:32
24	the other three, you're not limiting her testimony based	06:32
25	on the further clarification of the topic, are you?	06:32

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1	MR. ANSORGE: For the other three, she's	06:32
2	already testified as to the development, the	06:32
3	implementation, the use of bits and fields. We've gone	06:32
4	over those.	06:32
5	MR. MCGEE: Understood. Just making sure	06:32
6	we're clear.	06:32
7	I see. Okay.	06:33
8	And -- okay. I see what you're saying.	06:33
9	So Notice 2, Topic 10 has overlap with	06:33
10	Notice 4, Topic 1, is what you're saying, Dr. Ansorge?	06:33
11	MR. ANSORGE: I'm not sure it's Notice 4,	06:33
12	Topic 1, that that's a specific exhibit you're referring	06:33
13	to.	06:33
14	MR. MCGEE: Exhibit 16. Sure.	06:33
15	MR. ANSORGE: Dr. Sadowski already testified	06:33
16	as to each of those three fields.	06:33
17	MR. MCGEE: Right.	06:33
18	BY MR. MCGEE:	06:33
19	Q. So, Dr. Sadowski, I understand that in the	06:33
20	beginning we spoke about this, but the -- you used an	06:33
21	internal code search tool to look for ==not underscore==	06:33
22	==Chrome underscore incognito==. That returned no results	06:33
23	but that tool did not search all data sources for	06:34
24	Google; correct?	06:34
25	MR. ANSORGE: Objection. Mischaracterizes	06:34

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```
 1    prior testimony.                                    06:34

 2            THE WITNESS:  I searched on our internal code   06:34

 3    search tool over the multibillion line repository that   06:34

 4    is viewable to me internally, and did not see that field   06:34

 5    in the history of the repository.                   06:34

 6    BY MR. MCGEE:                                        06:34

 7        Q.   Okay.  And then the same thing for Chrome   06:34

 8    underscore non underscore incognito?                06:34

 9        A.   If you search for Chrome underscore        06:34

10    non underscore incognito in the internal code search   06:34

11    and browsing tool over the multibillion line repository   06:34

12    that's visible to me, when I did that, I got hits for   06:35

13    is underscore Chrome underscore non underscore incognito   06:35

14    underscore mode.                                    06:35

15        Q.   Okay.  Did you do any other searches for   06:35

16    fields or bits that would contain the term "incognito"?   06:35

17        A.   No.                                        06:35

18            MR. ANSORGE:  Objection.  Vague.            06:35

19    BY MR. MCGEE:                                        06:35

20        Q.   Did you do any other research or speak with   06:35

21    anyone at Google to determine whether any such fields   06:35

22    were developed whose function was intended to detect   06:35

23    incognito usage?                                    06:35

24            MR. ANSORGE:  Objection.  Vague and out of   06:35

25    the scope.                                          06:35
```

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1	THE WITNESS: The only accurate way I know	06:36
2	about to report incognito usage statistics is through	06:36
3	UMA because UMA is so privacy preserving that we can	06:36
4	report statistics about incognito usage. We do not have	06:36
5	other ways that we generate statistics -- accurate	06:36
6	statistics about incognito usage.	06:36
7	BY MR. MCGEE:	04:15
8	Q. Right.	04:15
9	A. There is one proxy, this -- using the	06:36
10	X-Client-Data header that's -- we have talked about the	06:36
11	▮▮▮▮▮ team used, but that is -- I would not	06:36
12	characterize that as a reliable way to look at	06:36
13	incognito usage statistics.	06:36
14	If someone asked me how to look at incognito	06:36
15	usage statistics, I would say the ways through UMA and	06:36
16	the metrics are visible in the external open source	06:36
17	chromium repository for full transparency.	06:37
18	Q. Okay. And did you do any further research to	06:37
19	see if any other fields can -- ever containing the word	06:37
20	"incognito" were implemented by Google, aside from the	06:37
21	four that are in this document and that you've	06:37
22	previously described?	06:37
23	MR. ANSORGE: Objection. Vague, and out of	06:37
24	the scope.	06:37
25	THE WITNESS: I did not do research on whether	06:37

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1	there are fields in some protocol buffer at Google that	06:37
2	use the word "incognito." That is an English word that	06:37
3	could have multiple meanings and could be used in	06:37
4	arbitrary ways by arbitrary people at Google.	06:37
5	BY MR. MCGEE:	06:37
6	Q. Okay. And did you do any research to see if	06:38
7	any such bit or field containing the word "incognito" is	06:38
8	being used at Google, other than what you've testified	06:38
9	to today?	06:38
10	MR. ANSORGE: Objection. Out of the scope.	06:38
11	Form. And asked and answered.	06:38
12	THE WITNESS: I believe I already answered	06:38
13	that. I did not do extra research about fields in	06:38
14	protocol buffers related to incognito beyond what we	06:38
15	have talked about today.	06:38
16	BY MR. MCGEE:	06:38
17	Q. Okay. Who at Google is responsible for	06:38
18	maintaining the UMA dashboards?	06:38
19	MR. ANSORGE: Objection. Vague, and out of	06:38
20	scope.	06:38
21	THE WITNESS: My team.	06:38
22	BY MR. MCGEE:	06:39
23	Q. I'm sorry. You said your team?	06:39
24	A. My -- I manage the Chrome metrics team which	06:39
25	owns UMA infrastructure, including the dashboards.	06:39

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1	Q. Okay. And who are those dashboards accessible	06:39
2	by at Google?	06:39
3	MR. ANSORGE: Objection. Vague.	06:39
4	THE WITNESS: The UMA dashboards are generally	06:39
5	available to engineers at Google. Generally viewable by	06:39
6	engineers at Google.	06:39
7	BY MR. MCGEE:	
8	Q. For the -- going back to Exhibit No. 2, your	06:40
9	fact sheet, how did you determine for the Zwieback	06:40
10	logs -- how did you determine that those were the ▬	06:40
11	responsive logs that contain that binary field?	06:40
12	A. What do you mean by Zwieback logs? Zwieback	06:40
13	is a type of ID, not a type of log.	06:40
14	Q. Right.	06:40
15	The is underscore Chrome underscore incognito	06:40
16	and that it would -- Zwieback or ▬▬▬▬ and	06:40
17	then you list ▬ logs; right?	06:41
18	How did you determine a -- how was that list	06:41
19	created? How were those logs identified?	06:41
20	A. By asking Quentin Fiard.	06:41
21	If you're asking where did these bullet points	06:41
22	come from, he's the person that I talked to that knows	06:41
23	about ▬▬ logs.	06:41
24	Q. Okay. And did he explain how he populated	06:41
25	that list?	06:41

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1	MR. ANSORGE: Objection. Vague.	06:41
2	THE WITNESS: Populated what list?	06:42
3	BY MR. MCGEE:	06:42
4	Q. The ▮ log sources that are on that list, did	06:42
5	he explain how he identified those? Or did you just	06:42
6	take his word for it?	06:42
7	MR. ANSORGE: Objection. Compound, and	06:42
8	argumentative.	06:42
9	THE WITNESS: I asked him about the -- what	06:42
10	logs were stored in ▮▮▮▮ and what their retention	06:42
11	periods were, and he came back with this list.	06:42
12	BY MR. MCGEE:	06:42
13	Q. When you did the internal code search for all	06:43
14	of these binary fields that we've identified in both	06:43
15	Notice 2, Topic 10, and then the other notice, did you	06:43
16	save the results of your queries?	06:43
17	A. No.	06:43
18	Q. Why not?	06:43
19	A. Because the way code search works, you search	06:43
20	for something, similar to Google search, you don't save	06:43
21	the results of your search if you are just looking up	06:43
22	a -- a stat -- like if you're looking if for definition	06:43
23	of a word or doing some math.	06:43
24	Q. But I can .pdf the results of a Google search;	06:43
25	right?	06:43

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1	MR. ANSORGE: Objection. Form, and out of the	06:43
2	scope.	06:44
3	THE WITNESS: When developers look at or	06:44
4	browse source code, they use the code search tool. They	06:44
5	do not save a copy of that tool on the side. That is an	06:44
6	internally available code search tool. You generally	06:44
7	shouldn't print out or save any kind of source code on	06:44
8	your local machine.	06:44
9	So the way that you would view source code is	06:44
10	through the code search tool. You don't save a copy of	06:44
11	your results. You search for results afresh if you want	06:44
12	to see them again.	06:44
13	BY MR. MCGEE:	06:44
14	Q. Okay. When you -- did you use the internal	06:44
15	code search tool to search for the is underscore Chrome	06:44
16	underscore incognito?	06:45
17	A. I looked up not underscore Chrome underscore	06:45
18	incognito, Chrome underscore non underscore incognito,	06:45
19	and is underscore Chrome underscore non underscore	06:45
20	incognito underscore mode, and that returns the same	06:45
21	set of results as Chrome underscore non underscore	06:45
22	incognito.	06:45
23	Q. Okay. But -- sorry. To be clear, did you run	06:46
24	is underscore Chrome underscore incognito through the	06:46
25	internal code search tool?	06:46

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1	A. No.	06:46
2	Q. But you did run the other one. And is that	06:46
3	how the list of log sources was populated in this	06:46
4	Exhibit 2 for Notice 2, Topic 10?	06:46
5	A. The way that the --	06:46
6	MR. ANSORGE: Objection. Vague.	06:46
7	THE WITNESS: The list -- the bulleted list in	06:46
8	Notice 2, Topic 10 were populated by Quentin Fiard.	06:46
9	BY MR. MCGEE:	
10	Q. Okay. But when you ran the is underscore	06:46
11	Chrome -- when you ran is underscore Chrome -- you	06:46
12	did -- let me ask it this way:	06:47
13	You did a lot of -- or you did a few internal	06:47
14	code search queries; right?	06:47
15	A. Yes.	06:47
16	I would also like to note that in the course	06:47
17	of my job, I frequently run internal code search	06:47
18	queries.	06:47
19	Q. Okay.	06:47
20	A. I did a couple code search queries in	06:47
21	preparation for this case, either yesterday or this	06:47
22	morning. It has blended together and I'm not sure	06:47
23	which. But I make queries in code search in the normal	06:47
24	course of my job.	06:47
25	Q. Okay. And one of those queries returned	06:48

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1	results; right?	06:48
2	A. Yes. If you search for Chrome underscore	06:48
3	non underscore incognito, that substring is part of a	06:48
4	name of a Boolean field in ███████ logs that I have	06:48
5	already testified about. And that binary field is using	06:48
6	X-Client-Data header information to proxy incognito	06:48
7	states. It is not an accurate name for the binary	06:48
8	field, and it is not used in UMA logs.	06:49
9	Q. Okay. I think I am -- very close. Just want	06:49
10	to make sure.	06:49
11	Does the is underscore Chrome underscore	06:49
12	non underscore incognito underscore mode bit exist in	06:49
13	non-███████ logs?	06:49
14	A. To the best of my knowledge, that is the only	06:49
15	place it exists. If you -- this particular binary field	06:49
16	was developed with -- in -- as part of the design doc	06:50
17	that we reviewed earlier so that the ███████ team could	06:50
18	look at how often they don't get a location header when	06:50
19	they're expecting to get a location header using the	06:50
20	presence -- or using the presence of the X-Client --	06:50
21	presence or absence of the X-Client-Data header as a	06:50
22	proxy here for situations when you would or wouldn't	06:50
23	expect to get a location header.	06:50
24	Q. I understand that.	06:50
25	A. And that is the only way it is being used, to	06:50

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```
 1    my knowledge.                                           06:50

 2        Q.   And what is the basis of your knowledge for -- 06:50

 3    what's the basis of your knowledge for that conclusion? 06:50

 4        A.   A few different things.                        06:51

 5             Talking to Quentin Fiard who was involved in   06:51

 6    actually implementing this field.                       06:51

 7             Looking in code search, including historical   06:51

 8    code search, for where this field is set and used.      06:51

 9             And also if you look in the protocol buffer    06:51

10    that has this field, there is an annotation saying that 06:51

11    it is specifically only used in ███████ logs.           06:51

12             And that there's also a comment that links to  06:51

13    the design doc that we talked about earlier that is     06:51

14    related to this field.                                  06:51

15        Q.   And that comment is on an internal document at 06:51

16    Google?                                                 06:51

17        A.   It is a source code comment.                   06:51

18        Q.   Okay.                                          06:52

19        A.   Not a document comment.  And it is a comment   06:52

20    directly above the definition of this field.            06:52

21             MR. MCGEE:  Okay.  I don't have any further    06:52

22    questions.                                              06:52

23             Thank you.                                     06:52

24             MR. ANSORGE:  We'd like to take a break to see 06:52

25    if we have any questions.                               06:52
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1	Five minutes okay, Mr. McGee?	06:52
2	MR. MCGEE: As long as you need. We can go	06:53
3	off.	06:53
4	MR. ANSORGE: All right. We'll go off the	06:53
5	record.	06:53
6	THE VIDEOGRAPHER: We are now going off the	06:53
7	record. The time is 6:53 p.m.	06:53
8	(Break taken in proceedings.)	06:53
9	THE VIDEOGRAPHER: We are now back on the	07:01
10	record. The time is 7:01 p.m.	07:01
11	MR. ANSORGE: Dr. Sadowski, thank you for your	07:01
12	patience and grace today. No questions from us. We're	07:01
13	happy to close the deposition at this time.	07:01
14	Mr. McGee, should we go off the record?	07:01
15	MR. MCGEE: Yeah. We can go off. But before	07:01
16	we go off, I guess I would like to note Google has	07:01
17	continued production of documents after the March 4th	07:01
18	deadline for document production, so I won't be closing	07:01
19	this deposition. But we can argue about that,	07:01
20	Dr. Ansorge, later.	07:02
21	MR. ANSORGE: Yeah. We can let Dr. Sadowski	07:02
22	get to her kids and we can argue about that, you know,	07:02
23	before and after our further brush of meet and confers.	07:02
24	MR. MCGEE: Yeah.	07:02
25	MR. ANSORGE: Okay. So with that, we can go	07:02

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```
1    off the record.                                              07:02

2            MR. MCGEE:  Yes.                                      07:02

3            THE VIDEOGRAPHER:  Conclusion of depo?               07:02

4            We are now going off the record.  The time is        07:02

5    7:02 p.m. and this concludes today's testimony given by      07:02

6    Caitlin Sadowski.  The total number of media units used      07:02

7    was seven, and will be retained by Veritext Legal            07:02

8    Solutions.                                                    07:02

9        (Whereupon, the deposition adjourned at 7:02 p.m.)

10                           ---o0o---

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EXHIBIT 4

Redacted Version of Document Sought to be Sealed

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```
 1            IN THE UNITED STATES DISTRICT COURT

 2         FOR THE NORTHERN DISTRICT OF CALIFORNIA

 3                   SAN JOSE DIVISION

 4                      ---o0o---

 5   CHASOM BROWN, et al.,            )

     on behalf of themselves and     )

 6   all others similarly            )

     situated,                       )

 7                                    )

             Plaintiffs,             )Case No.

 8                                    )5:20-cv-03664-LHK

     vs.                             )

 9                                    )

     GOOGLE LLC,                     )

10                                    )

             Defendant.              )

11   _____)

12

13                      ---o0o---

14           Videotaped Zoom Deposition of

15                     MANDY LIU

16                    CONFIDENTIAL

17              Tuesday, March 8, 2022

18                      ---o0o---

19

20

21

22

23   Katy E. Schmidt

24   RPR, RMR, CRR, CSR 13096

25   Job No.: 5121622


                                        Page 1
```

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```
 1        Q.   And if you know, was this project Bert's idea    07:18

 2   or did someone else come up with the idea?                 07:18

 3             MR. ANSORGE:  Objection.  Form.                   07:18

 4             THE WITNESS:  I'm not sure who came up with       07:18

 5   this idea.                                                  07:18

 6   BY MR. FRAWLEY:                                             07:18

 7        Q.   But it wasn't Bert?                               07:18

 8        A.   I'm not sure.                                     07:18

 9        Q.   Now, can you go back a couple of pages to the     07:18

10   page that ends in Bates 925?                                07:18

11        A.   Yeah.  I'm looking at it.                         07:19

12        Q.   And do you see the entry for February 11th,       07:19

13   2020?                                                       07:19

14        A.   Yes.                                              07:19

15        Q.   Okay.  Now, just go back down two pages to the    07:19

16   Bates ending in 927.                                        07:19

17        A.   Mm-hm.                                            07:19

18        Q.   And now do you see the ███████████████            07:19

19   bullet at the top?                                          07:19

20        A.   Yes.                                              07:19

21        Q.   And then do you see the sub-bullet "Working on    07:19

22   maybe_Chrome_incognito bit" in bold?                        07:19

23        A.   Yes.                                              07:19

24        Q.   So the maybe_Chrome_incognito bit was part of     07:19

25   the ███████████████   project?                             07:19
```

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1	A. Yes.	07:20
2	Q. And at that point, in February 2020, was	07:20
3	anyone else besides you working on the	07:20
4	maybe_Chrome_incognito bit?	07:20
5	MR. ANSORGE: Objection. Vague.	07:20
6	THE WITNESS: I only know that I am the only	07:20
7	one who has been working on the maybe_Chrome_incognito	07:20
8	bit.	07:20
9	BY MR. FRAWLEY:	07:20
10	Q. And what is ███?	07:20
11	A. ███████████████████████████████	07:20
12	Q. Do you know why it's called ███?	07:20
13	A. I'm not sure.	07:20
14	Q. Do you know if it is referring to a ██████	07:21
15	█████?	07:21
16	A. I don't know.	07:21
17	Q. And in February 2020, while you were working	07:21
18	on the maybe_Chrome_incognito bit, who at Google was	07:21
19	aware of your work?	07:21
20	MR. ANSORGE: Objection. Vague, and	07:21
21	foundation.	07:21
22	THE WITNESS: Can you be more specific about	07:21
23	which work you're talking about?	07:21
24	BY MR. FRAWLEY:	07:21
25	Q. The work on the maybe_Chrome_incognito bit	07:21

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```
 1   that is being referenced in this document.          07:21

 2              And my question is:  Who else knew that you  07:21

 3   were working on that?                               07:21

 4              MR. ANSORGE:  Same objection.            07:21

 5              THE WITNESS:  Do you mean who else in Google?  07:22

 6              MR. FRAWLEY:  Yes.                       07:22

 7              THE WITNESS:  And -- there are a few people  07:22

 8   who knew that I was working on this, but I don't    07:22

 9   remember exactly how many or who are they.          07:22

10   BY MR. FRAWLEY:

11       Q.   Off the top of your head, can you think of  07:22

12   anybody?                                            07:22

13       A.   Bert and Chris for sure.                  07:22

14       Q.   Okay.  I'm going to introduce another exhibit.  07:23

15                   (Plaintiffs' Exhibit 2 was          07:23

16                   marked for identification.)         07:23

17   BY MR. FRAWLEY:                                      07:23

18       Q.   Okay.  I've introduced Exhibit 2.          07:23

19              Please let me know when you have Exhibit 2 in  07:23

20   front of you.                                       07:23

21              And I apologize but the stamp says "Exhibit 1"  07:23

22   again.  We'll fix that later.  Let's just call this  07:23

23   Exhibit 2.                                          07:24

24              MR. ANSORGE:  So it's Exhibit 1, Tab D that  07:24

25   we're looking at now?                               07:24
```

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1	MR. FRAWLEY: This would be Tab 3.	07:24
2	MR. ANSORGE: Tab 3. Okay. Got it.	07:24
3	MR. FRAWLEY: Yeah. Sorry.	07:24
4	MR. ANSORGE: Got it.	07:24
5	MR. FRAWLEY: The stamp Is the most fun part	07:24
6	to me and I always mess it up. Okay. Sorry.	07:24
7	THE WITNESS: Yes. I'm looking at it.	07:24
8	BY MR. FRAWLEY:	07:24
9	Q. Okay. So just so we're all on the same page,	07:24
10	and I apologize, you're looking at the document that's a	07:24
11	September 17th, 2020 e-mail from Bert Leung; correct?	07:24
12	A. Yes.	07:24
13	Q. Okay. Thank you. And I apologize.	07:24
14	Can you look at the second page?	07:24
15	MR. ANSORGE: And, Ms. Liu, you're well within	07:24
16	your rights to familiarize yourself with the whole	07:24
17	document.	07:24
18	THE WITNESS: Okay.	07:24
19	Yeah. I'm looking at the second page.	07:25
20	BY MR. FRAWLEY:	07:25
21	Q. Okay. Do you see the e-mail about a third of	07:25
22	the way down, there is a July 13, 2020 e-mail at	07:25
23	8:44 a.m. from Chris Liao?	07:25
24	A. Yes.	07:25
25	Q. And do you see where Chris Liao wrote "The	07:25

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1	is_incognito bit itself is already inferred"?	07:25
2	A. Mm-hm.	07:25
3	Q. So the "is_incognito bit," that's the same	07:25
4	thing as the maybe_Chrome_incognito bit that we were	07:25
5	talking about from the prior document; correct?	07:25
6	A. I'm not sure if Chris meant that.	07:25
7	Q. If you know, were there any other bits about	07:25
8	incognito that he might have been referring to instead?	07:26
9	MR. ANSORGE: Objection. Form and foundation.	07:26
10	THE WITNESS: I don't know other bits for	07:26
11	incognito.	07:26
12	BY MR. FRAWLEY:	07:26
13	Q. And then do you see just above where he wrote	07:26
14	"We should probably rename that to maybe_incognito and	07:26
15	link to the documentation"?	07:26
16	A. Yes.	07:26
17	Q. So it sounds like from this -- and correct me	07:26
18	if I'm wrong -- the name started as maybe_incognito,	07:26
19	then it changed to is_incognito, and now Chris Liao was	07:26
20	saying "let's change it back to maybe_incognito"?	07:26
21	Is that right?	07:26
22	MR. ANSORGE: Objection. Form and foundation.	07:26
23	THE WITNESS: What I can read from this e-mail	07:27
24	is that it changed from is_incognito to maybe_incognito.	07:27
25	///	

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1	BY MR. FRAWLEY:	07:27
2	Q. And before this, did it ever change from	07:27
3	maybe_incognito to is_incognito?	07:27
4	MR. ANSORGE: Objection. Foundation.	07:27
5	THE WITNESS: Sorry. The light is...	07:27
6	MR. FRAWLEY: It's okay.	07:27
7	THE WITNESS: I don't know. If it's a	07:27
8	maybe_incognito before.	07:27
9	BY MR. FRAWLEY:	07:27
10	Q. And right now does Chris Liao have any	07:27
11	responsibility for the maybe_incognito bit?	07:28
12	MR. ANSORGE: Objection. Foundation.	07:28
13	THE WITNESS: I don't know if he has.	07:28
14	BY MR. FRAWLEY:	07:28
15	Q. When was the last time you talked to	07:28
16	Chris Liao about the maybe_Chrome_incognito bit?	07:28
17	A. I don't remember.	07:28
18	Q. Do you think it was more than six months ago	07:28
19	or less?	07:28
20	A. I don't remember.	07:28
21	Q. And at this time, in July 2020, if you know,	07:29
22	were any lawyers involved in the maybe_incognito bit?	07:29
23	MR. ANSORGE: Objection. Vague and form.	07:29
24	THE WITNESS: Well, first of all, I want to	07:29
25	clarify the maybe_incognito bit should -- you are	07:29

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1	talking about should be the <mark>maybe_incognito</mark> Boolean	07:29
2	field.	07:29
3	And about the lawyers, I don't know.	07:29
4	BY MR. FRAWLEY:	07:29
5	Q. And thank you for that clarification.	07:29
6	Can you explain to me what is a Boolean field?	07:29
7	A. A Boolean field is a type of data container	07:30
8	that only contains value that is either true or false.	07:30
9	Q. Okay. I'm going to introduce another exhibit.	07:30
10	(Plaintiffs' Exhibit 3 was	07:30
11	marked for identification.)	07:30
12	BY MR. FRAWLEY:	07:31
13	Q. Okay. Today is not my day with marking	07:31
14	exhibits. We'll call this Exhibit 3, even though	07:31
15	there's no stamp.	07:31
16	Let me know when you have this document in	07:31
17	front of you, Ms. Liu.	07:31
18	A. Is it the Exhibit 3, Tab 1?	07:31
19	Q. That's correct. I'm sorry that I'm making it	07:31
20	confusing with the different numbers.	07:31
21	A. That's okay.	07:31
22	Q. My question here is about the fourth page of	07:31
23	this document.	07:31
24	MR. ANSORGE: Ms. Liu, you're well within your	07:31
25	rights to familiarize yourself with the document.	07:31

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1	THE WITNESS: Okay. Thank you.	07:31
2	Would you please tell me the Bates number for	07:32
3	the page?	07:32
4	BY MR. FRAWLEY:	
5	Q. Yes.	07:32
6	The Bates ending in 280.	07:32
7	A. Okay. Yeah, I'm looking at this.	07:32
8	Q. Okay. Do you see the bottom e-mail where you	07:32
9	wrote:	07:32
10	"Hi all. Ads identity team is currently working on	07:32
11	a project to detect third-party cookie-blocking	07:32
12	browsers"?	07:32
13	A. Yes.	07:32
14	Q. And you are a member of the ads identity team;	07:32
15	correct?	07:32
16	A. Yes.	07:32
17	Q. And who else was a member of the ads identity	07:32
18	team at this point in October 2020?	07:32
19	A. Bert and Chris.	07:32
20	Q. So you were working with them on this project	07:32
21	to detect third-party cookie-blocking browsers?	07:32
22	MR. ANSORGE: Objection. Form, and vague.	07:33
23	THE WITNESS: I was working with Bert and	07:33
24	Chris on this third-party cookie-blocking browser	07:33
25	project.	07:33

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1   Chrome_incognito rate is three" -- "is around   08:22

2   three percent"?   08:22

3   A.   Yes.   08:22

4   Q.   And that's referring to the rate according to 08:22

5   your dashboard; correct?   08:22

6   A.   Yes.   08:22

7   Q.   So on January 27th, your dashboard said that 08:22

8   the incognito rate is around ■ or ■ percent.   08:22

9   But now on February 3rd, the dashboard is   08:22

10   saying the incognito rate is around three percent; fair? 08:22

11   A.   Yes.   08:23

12   MR. ANSORGE: Objection. Compound.   08:23

13   BY MR. FRAWLEY: 08:23

14   Q.   And why was that good news?   08:23

15   A.   Because it's closer to the number Bert told   08:23

16   me.   08:23

17   Q.   What did Bert say about this good news?   08:23

18   A.   I don't remember exactly.   08:23

19   Q.   And what, if anything, did you do -- well -- 08:23

20   yeah. Sorry. Let me restart.   08:24

21   What, if anything, did you do between   08:24

22   January 27th and February 3rd?   08:24

23   MR. ANSORGE: Objection. Vague.   08:24

24   THE WITNESS: Could you be more specific?   08:24

25   ///

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1	BY MR. FRAWLEY:	08:24
2	Q. Right.	08:24
3	What, if anything, did you change that	08:24
4	resulted in the rate from your dashboard going from	08:24
5	around ▮ to ▮ percent to then going down to around	08:24
6	<mark>three</mark> percent?	08:24
7	A. I didn't do anything.	08:24
8	Q. So then how can you explain the rate going	08:25
9	from ▮ to ▮ percent to around <mark>three</mark> percent?	08:25
10	A. It's because on January 27th, the change that	08:25
11	makes the incognito rate from ▮ or ▮ percent to	08:25
12	<mark>three</mark> percent has -- hasn't rolled out yet.	08:25
13	Q. Did you say "the change"?	08:25
14	A. Yes.	08:25
15	Q. What do you mean -- what's the change?	08:25
16	A. ██████████████████████████████	08:25
17	███████	08:26
18	Q. When was that change rolled out?	08:26
19	A. I think it's between January 27th and	08:26
20	February 3rd.	08:26
21	Q. Okay. Let me introduce a new exhibit.	08:26
22	(Plaintiffs' Exhibit 8 was	08:26
23	marked for identification.)	08:26
24	BY MR. FRAWLEY:	08:27
25	Q. Okay. I've introduced Exhibit 8.	08:27

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1	Please let me know when you have Exhibit 8 in	08:27
2	front of you.	08:27
3	A. Yeah. I'm looking at Exhibit 8.	08:27
4	Q. Okay. Exhibit 8 is a list of logs; correct?	08:27
5	A. Exhibit 8 is an email that has a list of logs.	08:27
6	Q. And is this the list of logs that has the	08:27
7	maybe_Chrome_incognito field?	08:28
8	A. Looks like, yes.	08:28
9	Q. Now, if you know, when was the	08:28
10	maybe_Chrome_incognito field added to these logs?	08:28
11	MR. ANSORGE: Objection. Compound.	08:28
12	THE WITNESS: I'm not sure of the exact date.	08:28
13	BY MR. FRAWLEY:	08:28
14	Q. Was it the same date for every single log or	08:28
15	was it added to different logs at different times?	08:28
16	A. It was added at one time.	08:29
17	Q. Sorry. So for each log it was added at the	08:29
18	exact same time; right? Is that what you mean?	08:29
19	A. Yes.	08:29
20	Q. And you explained earlier that a Boolean field	08:29
21	means that it can only be true or false; correct?	08:29
22	A. Yes.	08:29
23	Q. So right now, today, could you -- sorry. Let	08:29
24	me restart.	08:29
25	Right now, today, could someone at Google run	08:29

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1	a search for every single log entry where	08:29
2	maybe_Chrome_incognito shows up as true?	08:29
3	MR. ANSORGE: Objection. Foundation. And	08:30
4	calls for speculation. And form.	08:30
5	THE WITNESS: I think that only someone with	08:30
6	certain permission to the logs -- to access the logs	08:30
7	may query the log to see this Chrome_incognito --	08:30
8	maybe_Chrome_incognito Boolean field.	08:30
9	BY MR. FRAWLEY:	08:30
10	Q. And that person could run a query for	08:30
11	maybe_Chrome_incognito equals true?	08:30
12	A. Yes.	08:30
13	Q. Now, can you just explain to me at a high	08:31
14	level the logic that goes into making the choice of	08:31
15	whether something should be labeled true for	08:31
16	maybe_Chrome_incognito?	08:31
17	MR. ANSORGE: Objection. Form and vague.	08:31
18	THE WITNESS: The high level logic, you mean	08:31
19	like -- could you specify what's high level logic?	08:31
20	BY MR. FRAWLEY:	08:31
21	Q. Sure.	08:31
22	Like what kind of information is the field	08:31
23	using or looking at to decide whether it's going show up	08:31
24	as true?	08:31
25	A. I will be -- so the input for determining this	08:32

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1   Chrome_incognito Boolean field will include the absence   08:32

2   of X-Client-Data header and also whether the request is   08:32

3   from WebView and also if the request is from OS or   08:32

4   macOS.   08:32

5   Q.   And the information that you just listed, is   08:32

6   all of that information stuff that's already part of the   08:33

7   same list of logs?   08:33

8   MR. ANSORGE: Objection. Vague.   08:33

9   THE WITNESS: Do you mean are those input I   08:33

10   talk about, are they in the -- in this list of logs, or   08:33

11   do you mean --   08:33

12   MR. FRAWLEY: Yes. That's exactly what I   08:33

13   mean.   08:33

14   THE WITNESS: Okay. So my input -- my input   08:33

15   for like determining the Chrome_incognito Boolean field   08:33

16   will not -- are not logged in this log.   08:34

17   MR. FRAWLEY: Okay. Could we do like a   08:34

18   five-minute break, Ms. Liu?   08:34

19   THE WITNESS: Okay.   08:34

20   MR. FRAWLEY: Okay, Joey?   08:34

21   MR. ANSORGE: Yeah. Fine by me. Should we   08:34

22   reconvene at 20 to the hour?   08:34

23   MR. FRAWLEY: Yes.   08:34

24   MR. ANSORGE: Does that work?   08:34

25   MR. FRAWLEY: Perfect.   08:34

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